

REMARKS

I. Status of the Claims

Claims 1-19 and 21-131 are pending. Claims 1-19 and 21-42 stand rejected. Claims 43-131 remain withdrawn from consideration in view of the Examiner's Restriction requirement of July 22, 2003.

No amendments are made at this time.

II. Rejection under 35 U.S.C. § 102(b)

The Examiner maintains the rejection of claims 1-5, 7-11, 18-19, 21, 25-26, 29, 32-34, and 37-41 under 35 U.S.C. § 102(b) "as being anticipated by Helioff et al." (U.S. Patent No. 4,793,994) ("*Helioff*"). Final Office Action at 2.

Applicants continue to respectfully traverse for at least the reason that *Helioff* does not anticipate the present claims at least because it does not disclose "at least one reducing agent chosen from thiols, sulfites, and derivatives thereof; and . . . at least one complexing agent **effective for dissociating the at least one hydroxide compound in a sufficient quantity to effect lanthionization** of keratinous fibers, wherein said at least one hydroxide compound and said at least one reducing agent are present in a combined amount effective to **relax keratinous fibers**" See, e.g., Claim 1 (emphasis added).

Applicants have previously pointed out to the Examiner that, as explained in "Milady's Hair Structure and Chemistry Simplified" by Douglas D. Schoon, pages 191-192 ("*Schoon*"), lanthionization is the forming of a single sulphur cross-linked bond. This is in direct contrast with two sulphur atoms forming a bridge, which is what forms during permanent waving. See *Schoon* at 192. Thus, it is impossible for the chelating

agent as disclosed in the “Bisulfite **Waving** Formulation” table of *Helioff* (emphasis added) to dissociate the at least one hydroxide compound in a sufficient quantity to effect **lanthionization** of keratinous fibers because “[p]ermanent wave reducers cannot break lanthionine cross-link bonds,” *Schoon* at 192, and *Helioff* only teaches a chelating agent with a reducer in a **permanent waving solution**.

The Examiner attempts to rebut Applicants’ argument by contending that the disclosure of *Schoon* “teaches and discloses the property of the chemical radical disulfide ‘-S₂’ while *Helioff* . . . teaches a radical of bisulfite ‘-HSO₃’.” Final Office Action at 4.

Applicants respectfully point out to the Examiner that the chemical radical disulfide the Examiner alleges as taught in *Schoon* is, in fact, a description of the disulfide bonds between “two sulphur atoms on adjacent polypeptide chains,” of the keratin fibers. *Schoon* at 192. These disulfide bonds are known to persons skilled in the art, and also recognized by *Helioff*, which discusses the “disulfide bonds present in the cystine component of keratin.” *Helioff* at Col. 1, lines 32-33. As known by persons skilled in the art, and exemplified by *Schoon*, the chemical treatments of perming and relaxing result in different types of disulfide bonds on the keratin fibers. See *Schoon* at 191-192. Thus, the combination of chemicals used will determine the type of disulfide bond reformed on the keratin fibers, and whether the keratin fibers are curled or relaxed. *Id.*

Therefore, while the Examiner does not specify where *Helioff* teaches a radical of bisulfite, it clearly does not apply to *Schoon*’s teaching, nor to the knowledge of those skilled in the art, relating to the disulfide bonds of hair. Accordingly, *Helioff* still does not

teach “at least one complexing agent effective for dissociating the at least one hydroxide compound in a sufficient quantity to effect **lanthionization** of keratinous fibers” as required by the present claims.

The Examiner further contends that “the [Schoon] article teaches that Sodium bisulfite as a reducing agent can also be used as relaxers (see page 191). Therefore, the composition of *Helioff* et al. can be used for lanthionizing keratinous fibers as claimed.” *Id.*

Applicants respectfully disagree with the Examiner. The teaching of *Schoon* does not and cannot remedy the deficiencies of *Helioff*. Regardless of whether *Schoon* teaches that sodium bisulfite can be used as a reducing agent, in order for *Helioff* to anticipate the present claims, ***Helioff* must be found to teach** “at least one hydroxide compound and said at least one reducing agent are present in a combined amount effective to **relax** keratinous fibers,” as claimed. In contrast however, the table entitled “Bisulfite Waving Formulation” of *Helioff* teaches **waving**, and not relaxing or straightening compositions.

Thus, the at least one hydroxide compound and reducing agent of *Helioff* cannot be not taught in an amount effective to relax keratinous fibers, as they are taught in an amount effective for waving keratinous fibers. This point is reinforced by the fact that *Helioff* does not teach that the “Bisulfite Waving Formulation” can be used for relaxing and/or straightening, but instead lists another formulation for hair straightening, which also does not teach every element of the presently claimed invention. See *Helioff*, column 6, lines 6-43.

For at least these reasons, *Helioff* does not anticipate the present invention because it does not disclose each and every element of the present claims. Accordingly, this rejection is in error and Applicants respectfully request its withdrawal.

III. Rejection under 35 U.S.C. § 103(a)

The Examiner maintains the rejections of claims 6, 22-23, 36 and 42 under 35 U.S.C. § 103(a) “as being unpatentable over *Helioff*,” (Final Office Action at 2); the rejections of claims 12-17, 27, and 30-31 “under 35 U.S.C. § 103(a) as being unpatentable over *Helioff* . . . in view of *Au et al.*” (U.S. Patent No. 5,872,111) (“*Au*”) (*Id.*); the rejection of claims 24 and 35 under 35 U.S.C. § 103(a) “as being unpatentable over *Helioff* . . . in view of *Mathews et al.*” (U.S. Patent No. 4,816,246) (“*Mathews*”) (*Id.*); and the rejection of claim 28 under 35 U.S.C. § 103(a) “as being unpatentable over *Helioff* . . . in view of *Pyles et al.*” (U.S. Application Publication No. US2001/0008630 A1) (“*Pyles*”) (*Id.*).

Applicants continue to traverse these rejections for at least the reason that the Examiner has not established a prima facie case of obviousness. The Examiner must show, among other things, that the cited references teach or suggest all of the claim limitations. See M.P.E.P. § 2143 (“**All words** in a claim must be considered in judging the patentability of that claim against the prior art.”) (emphasis added) (citations omitted). As discussed above, *Helioff* does not teach or disclose all of the claimed elements of claim 1.

The Examiner “respectfully disagrees” with Applicants’ previous arguments based on his rationale regarding our non-anticipation arguments. Final Office Action at 5. As discussed above, Applicants respectfully submit that the Examiner’s arguments

do not cure the deficiencies of *Helioff*. Thus, the Examiner has not and cannot establish a prima facie case of obviousness with *Helioff* and the present claims, with or without the secondary references. Accordingly, this rejection is in error and Applicants respectfully request its withdrawal.

CONCLUSION

In view of the foregoing remarks, Applicants respectfully request the reconsideration of this application and the timely allowance of the pending claims.

If the Examiner believes a telephone conference could be useful in resolving any of the outstanding issues, he is respectfully invited to contact Applicants' undersigned counsel at 202-408-4368.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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